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THE INTRODUCTION OF A CONTEMPORARY BUILDING INTO A HISTORIC FABRIC

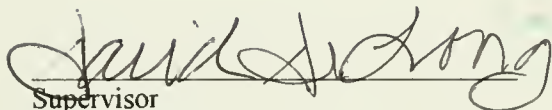
Gregory John Saldaña

A THESIS  
in  
Historic Preservation

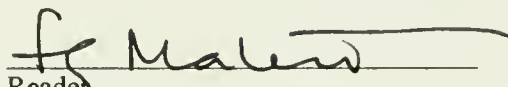
Presented to the Faculties of the University of Pennsylvania in Partial Fulfillment of the  
Requirements for the Degree of

MASTER OF SCIENCE

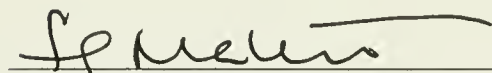
2000



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To the men, women and children of the Aslam Mosque Neighborhood and my lovely wife Teresa.





## Acknowledgements

This thesis presents an architectural design response to one of three pilot projects currently scheduled for implementation toward the revitalization of the al-Darb al-Ahmar Aslam Mosque Neighborhood sponsored by the Aga Khan Trust for Culture's Historic Cities Programme, directed by Dr. Stefano Bianca. The framework of the existing urban revitalization program has been developed by an interdisciplinary team from Aga Khan Cultural Services, Egypt (AKCS-E) and the Historic Preservation Program of the University of Pennsylvania's Graduate School of Fine Arts, under the coordination of Francesco Siravo, Senior Project Officer, AKTC and Associate Professor Frank Matero, Chairman, University of Pennsylvania Graduate Program in Historic Preservation.

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## Introduction

This design thesis was developed as a response to an established urban conservation plan sponsored by the Aga Khan Trust for Culture Historic Cities Support Program. Under the current plan which focuses on the Aslam Mosque Neighborhood located in the Darb al-Ahmar Historic District of Islamic Cairo recommendations have been made for immediate actions to include provisions for additional housing through new development.

The intention of this thesis is to respond to those recommendations set forth in the conservation plan. This has been attempted through two components of the thesis. The first component is a compilation of notes and visual observation. The second is comprised of architectural drawings.

The compilation of notes and related illustrations of this thesis are based on technical reports, related writings, and site visits made and are an attempt to identify the family unit, the building typology, building material and related architectural conditions of the area. Site visits included observations of the Darb al-Ahmar historic district of Islamic Cairo and were not limited to the Aslam Mosque neighborhood. Readers interested in a history of Islamic architecture are directed to the Thames and Hudson book, *Architecture of the Islamic World* for accounts of Islamic architecture not intended to be a part of this proposal.

The proposed architectural program for the site identified as Lot 488 Darb Shouglan is a



mixed-use building that includes area at the ground level for commercial use and upper level area for residential use. Recommendations for this program are described through the architectural drawings.





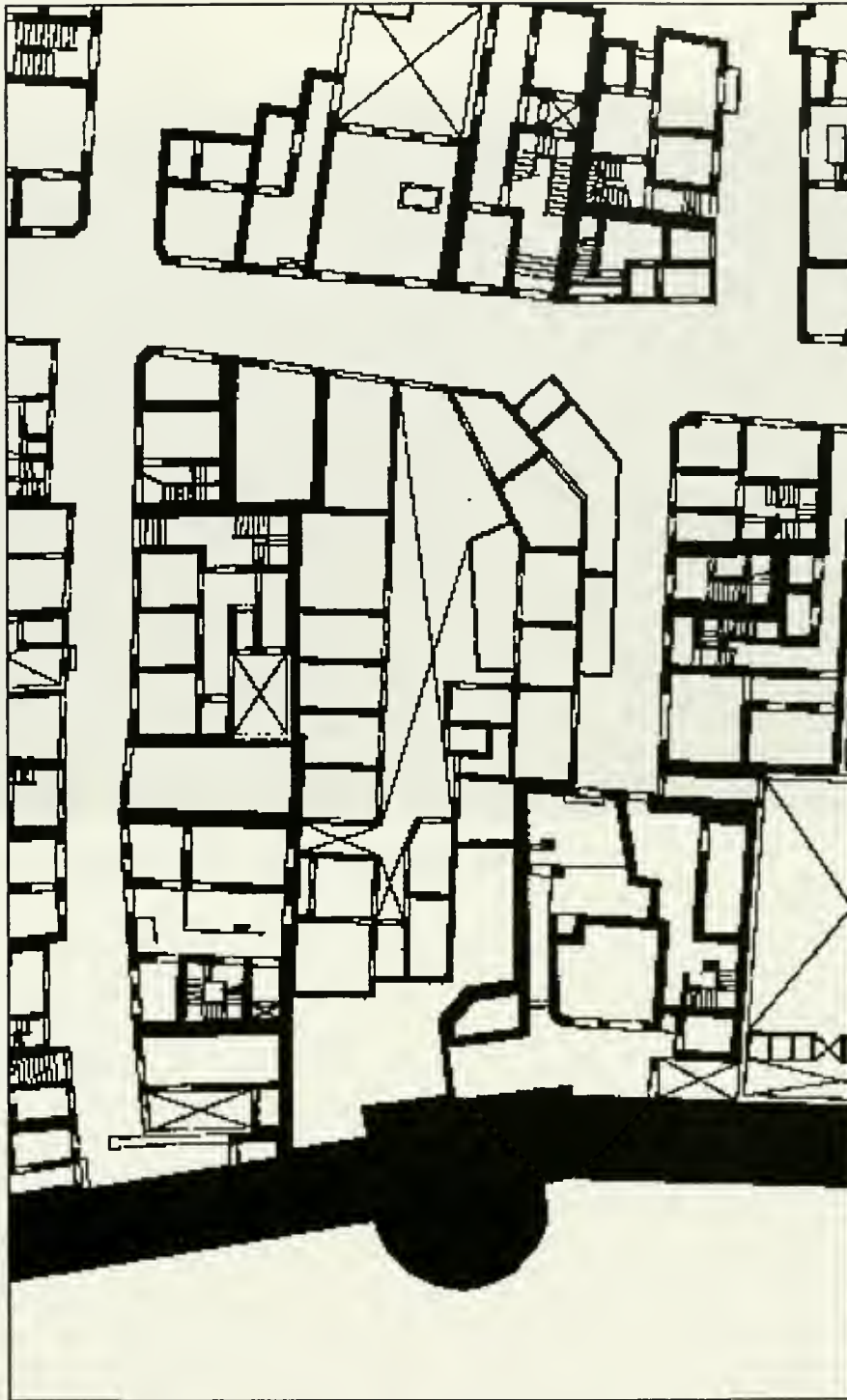
## Chapter 1: Lot 488 Darb Shouglan

Within the Aslam Mosque Neighborhood lies the subject area referred to as Lot 488, Darb Shouglan. The northern boundary of the subject area is the side street Zuqaq Aybak. The southern boundary includes all the buildings fronting the north side of Atfet Hozayen. The eastern boundary includes a portion of the Ayyubid Wall and its respective tower. The western boundary is the major street Darb Shouglan. The northeast corner of the site abuts a residential building that is bounded by Zuqaq Aybak to the west and the Ayyubid wall to the east 1 (fig.1-4).

Lot 488 is roughly rectangular in shape with the approximate dimensions of 13 meters on the north to south axis and 35 meters along the east to west axis. Comprised of an area of approximately 455 square meters it is currently occupied by make shift structures built from the rubble and various building materials that remain from previous buildings that once occupied the site.

The lot is currently rented from the Ministry of the Awqaf and sublet to the tenants living on the site. There are approximately 59 residents occupying 16 rooms of the make shift structures. There is one toilet that services all tenants. Running water has been observed on the site and it is not known if there is electricity available to the residents.2





**Figure 1.** Subject area with Lot 488 shown at center of illustration reprinted from ground plan provided by Aga Khan Cultural Services-Egypt Office.





**Figure 2.** View of Lot 488 from the east (photo of the author).





**Figure 3.** View of the Ayyubid Wall and eastern boundary of Lot 488 (photo of the author).









**Figure 3.** View of Darb Shouglan street scene and Lot 488 western boundary (photo of the author).



## Chapter 2: **The Context**

The context was recorded by the author photographically and represent the building context fronting Darb Shouglan to the north and south of Lot 488. The west façade of each building was photographed as a visual record and to allow for the construction of a street elevation drawing to be used in the design process. The buildings fronting Darb Shouglan can be characterized as having irregular heights, planar facades, and irregular window openings (fig. 5-17). Additionally, most buildings have limestone block and rubble core at the ground level with a thin coat of stucco or plaster presumably as an attempt of maintenance at a later time than the original construction period. Upper level floor facades include a stucco finish. Each photograph has been captioned with a building number identified by the AKTC-E office. 1





**Figure 5.** View of Building 440 a traditional residential building as identified by AKCS-E (photograph of the author).







**Figure 7.** View of Building 439 a traditional residential building as identified by AKCS-E (photograph of the author).







**Figure 8.** View of Building 436 Darb Shouglan a traditional residential building as identified by AKCS-E. (Photograph of the author.)





**Figure 8.** View of Building 430 Darb Shouglan a traditional residential building as identified by AKCS-E. (Photograph of the author.)

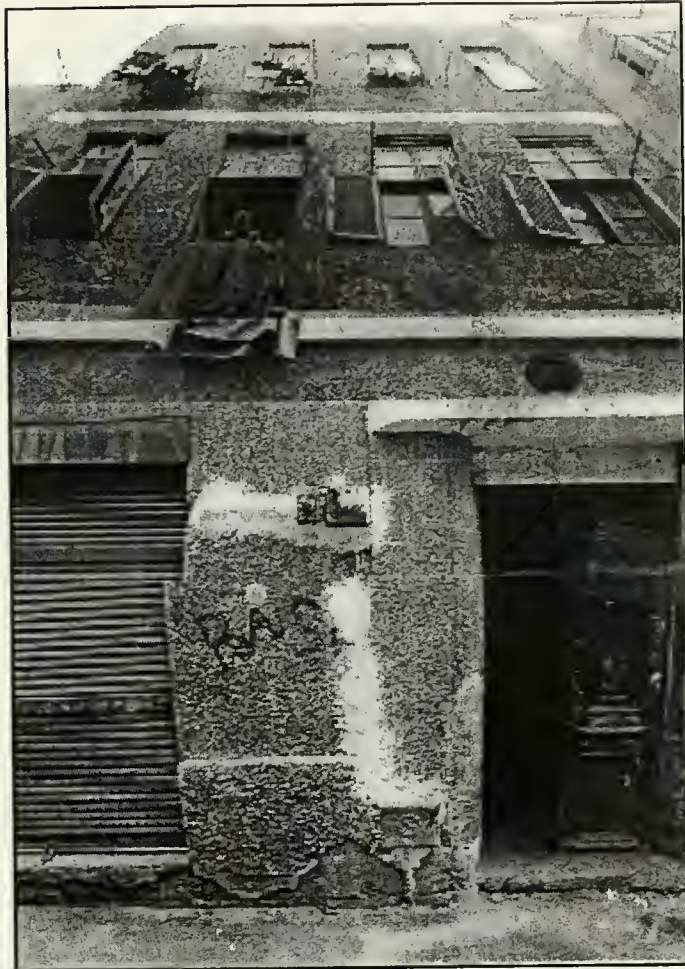




**Figure 9.** View of Building 432 a traditional residential building as identified by AKCS-E. (Photograph of the author.)







**Figure 10.** View of Building 430 Darb Shouglan a traditional residential building as identified by AKCS-E (photo of the author).







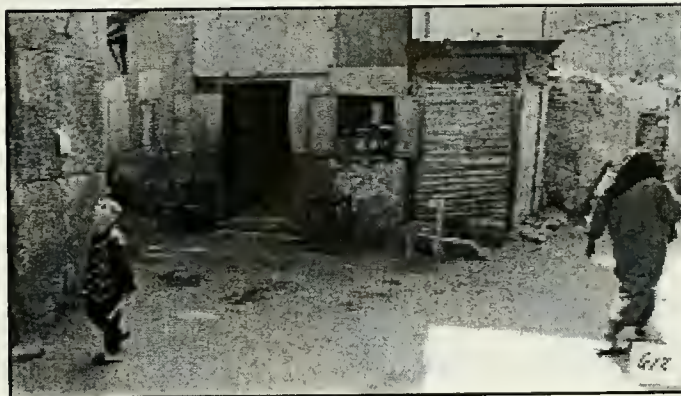
**Figure 11.** View of Building 430 Darb Shouglan a traditional residential building as identified by AKCS-E (photograph of the author).





**Figure 12.** View of Building 426 Darb Shouglan a traditional residential building as identified by AKCS-E (photograph of the author).





**Figure 13.** View of Building 612 Darb Shouglan a traditional residential building as identified by AKCS-E (photograph of the author).



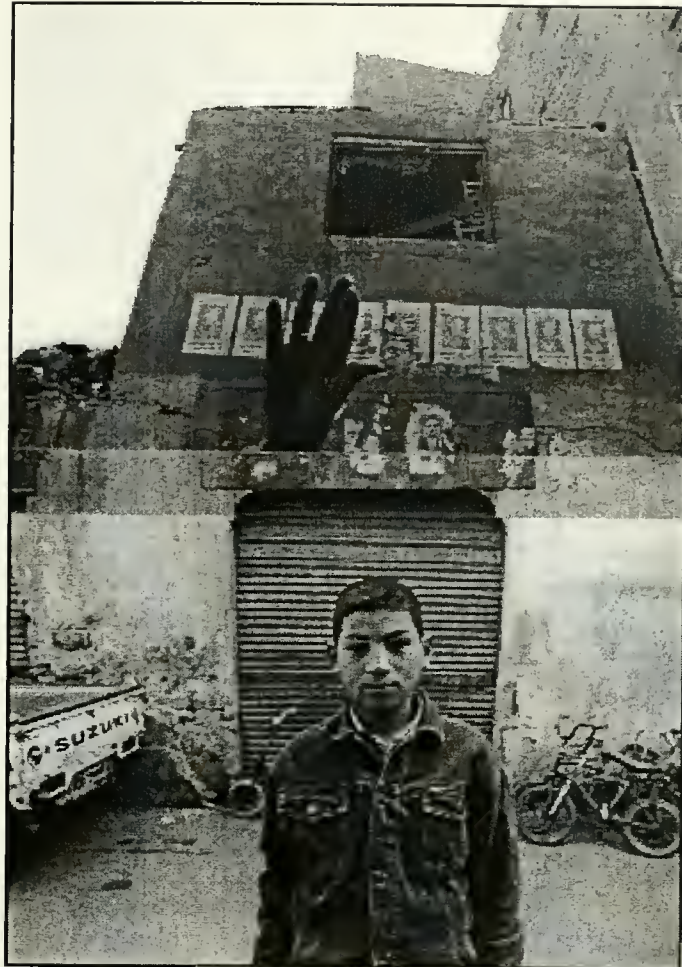




**Figure 14.** View of Lot 488 a traditional residential building as identified by AKCS-E (photograph of the author).

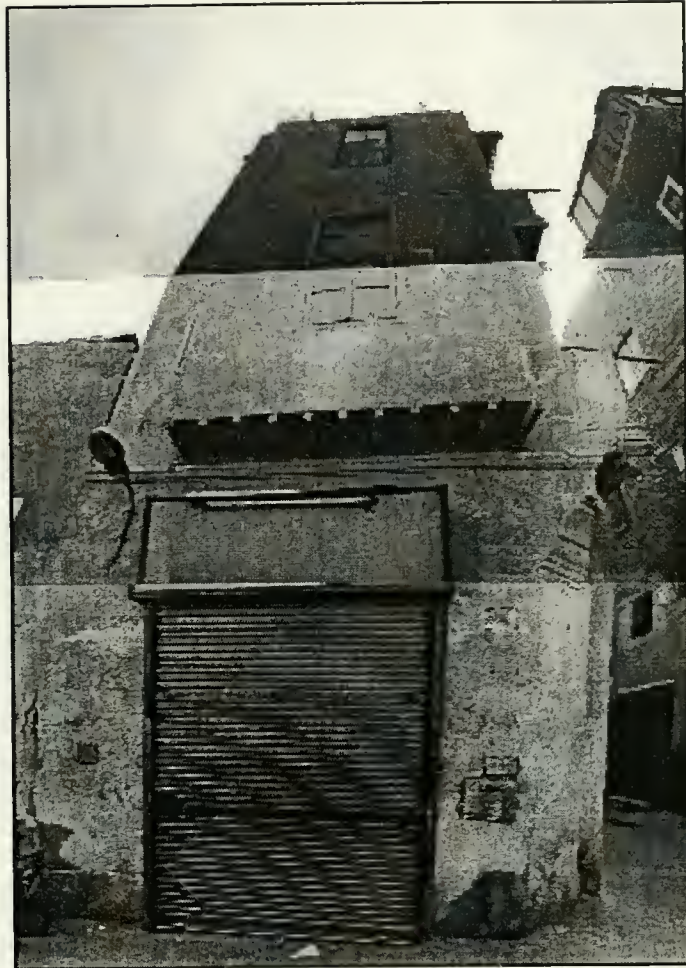






**Figure 16.** View of Building 487 Darb Shouglan a traditional residential building as identified by AKCS-E (photograph of the author).





**Figure 16.** View of Building 424 Darb Shouglan a traditional residential building as identified by AKCS-E (photograph of the author).





**Figure 17.** View of Building 409 Darb Shouglan a traditional residential building as identified by AKCS-E (photograph of the author).



## **Chapter 3: Identified Building Typology**

Building typology has been identified by observation of patterns in building plan, elevation, design, use, siting, construction technology, and material. Building types in the neighborhood include Traditional Residential, Traditional Collective, Modern Construction, Religious, Substandard Housing and Ruined Buildings.<sup>1</sup>

Patterns of building plan, use, and siting of related traditional residential, traditional collective and modern construction building types are of primary interest and will be described in the following paragraphs.

### **The Traditional Townhouse**

Traditional townhouses are residential buildings that were initially constructed between 1880 and 1920. These buildings were constructed on small narrow plots of land and have a linear-based arrangement of interior spaces. Most have only one façade and often include a light well or a courtyard to allow light and air into the rear of the building. Since the average plot size rarely exceeds forty square meters, stone corbel or wooden beams are frequently used to allow upper stories to project over the street to provide additional space (fig. 18-19).

Additionally most of these buildings are residential buildings that host commercial activities on the ground floor especially in buildings located on Darb Shouglan. In these cases the spaces with direct access to the street are generally designated for commercial



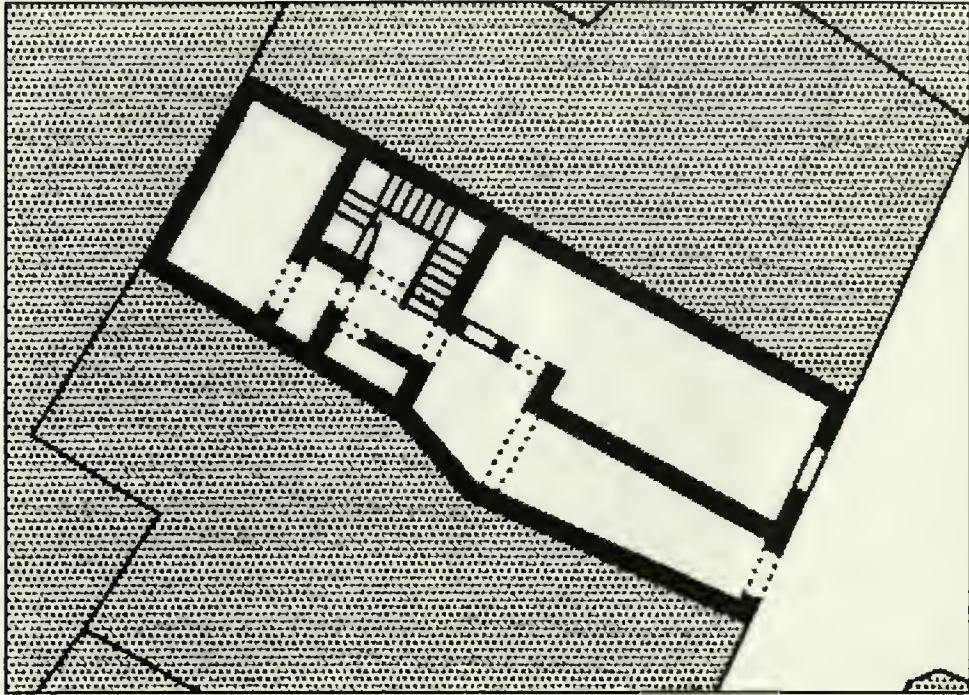




activities while the rest of the ground floor retains a more residential function. In smaller side street buildings were constructed to be solely residential, indicating that ever since the late nineteenth century there was a distinction between residential and mixed-use streets.

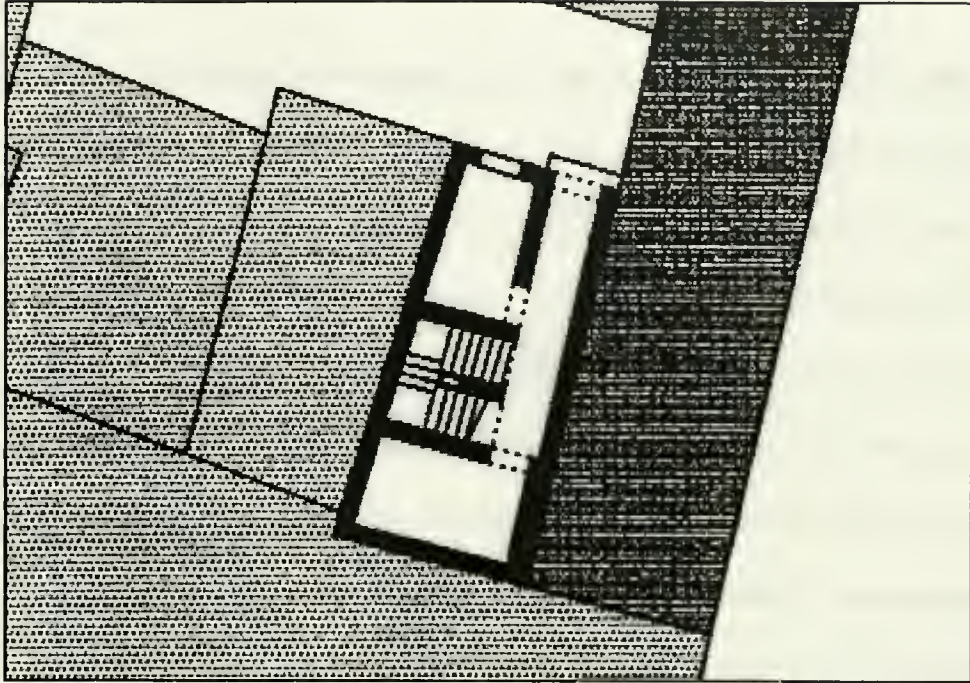
Most of these buildings were originally constructed for single extended middle class families but are now often subdivided into smaller residential units occupied by lesser income groups. Some were constructed as multiple-family residences; this can be distinguished by the fact that their staircases are clearly separated from their living areas creating a distinction between public and private space. 2





**Figure 18.** Traditional Townhouse fronting Darb Shouglan; illustration provided by AKSCS-E (not shown to scale).





**Figure 19.** Traditional Townhouse fronting a side street ; illustration provided by AKSCS-E (not shown to scale).



### **The Rab'**

In addition to buildings that were constructed to house one or two families, there were also buildings built to house numerous families. This building type is known as the rab' and was developed in the Mamluk period as a residential structure for lower and middle classes. Typically this building type consisted of a series of similar housing units that were rented out. The nineteenth century rab' differed from the medieval rab in that most of the units were single family units however the function remained the same: serving to house large numbers of people in one building made up of small units with shared utilities. The rab' continued as an architectural typology until the early twentieth century. There is currently one rab' building in the neighborhood located in the Aslam Square adjacent to the mosque that was constructed circa 1880. As originally intended the building is host to residential and commercial uses. The ground level includes a carpentry workshop, a dairy shop, a grocery store and a butcher shop (fig. 20). The building is deteriorated and has been summarized in the conservation plan as an irreversibly altered building. 3

### **The Small Apartment Building**

These building types were constructed between 1920 and 1940 as multiple-family residential structures and were generally three stories high. Floors are clearly divided into separate units with their own utilities. It shares similarity to the traditional townhouse in that the projecting upper stories and the ground floor will also include one or more

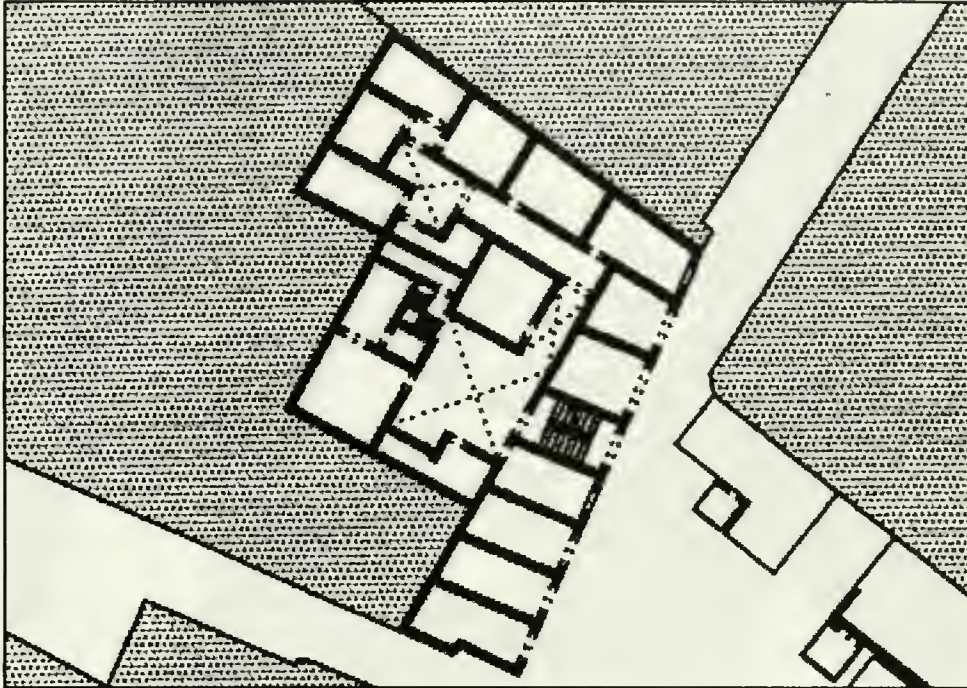




commercial shops (fig. 21).

The plan has a greater regularity than other types and a standardization of units. Building plots are long and narrow, as is the case with the townhouse. This building type has been evaluated as being compatible with the surrounding fabric. 4





**Figure 20.** Traditional Collective fronting Aslam Square; illustration provided by AKSCS-E (not shown to scale).





**Figure 21.** Small Apartment Building fronting a side street; illustration provided by AKSCS-E (not shown to scale).



### **Modern Townhouse**

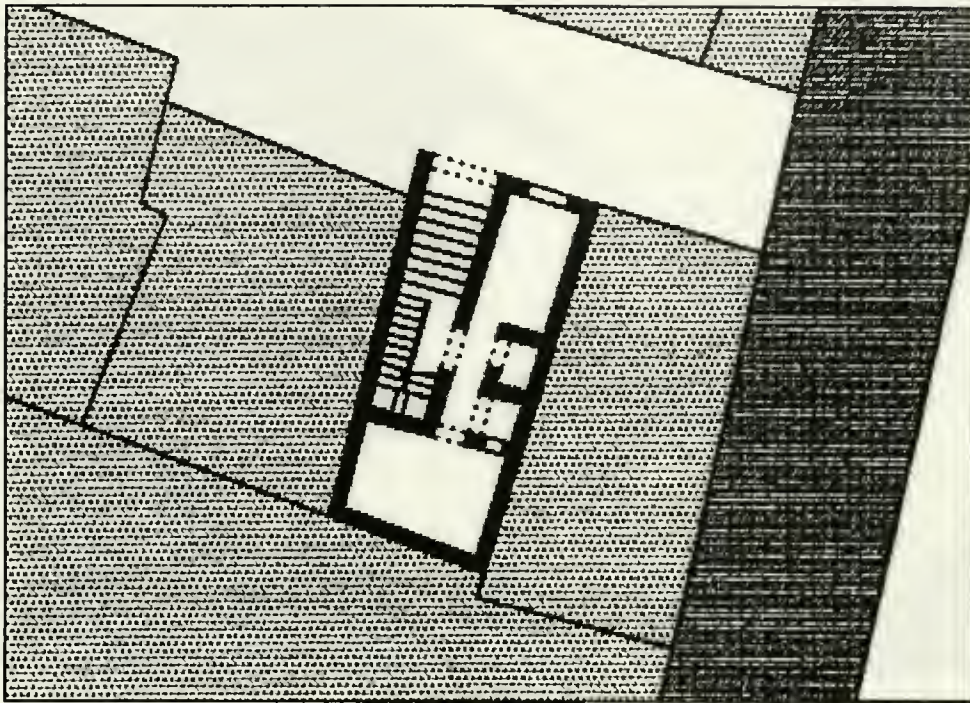
Similar to the modern apartment building in material and construction period this building type, however, conforms to the traditional townhouse footprint (fig. 23). This results in a similar scale and composition of interior spaces as the traditional arrangement. 5

### **Modern Commercial**

Buildings of this type are generally situated on major streets or squares (fig. 22). They are typically one-story structures with a series of divisions for various shops or workshops. 6

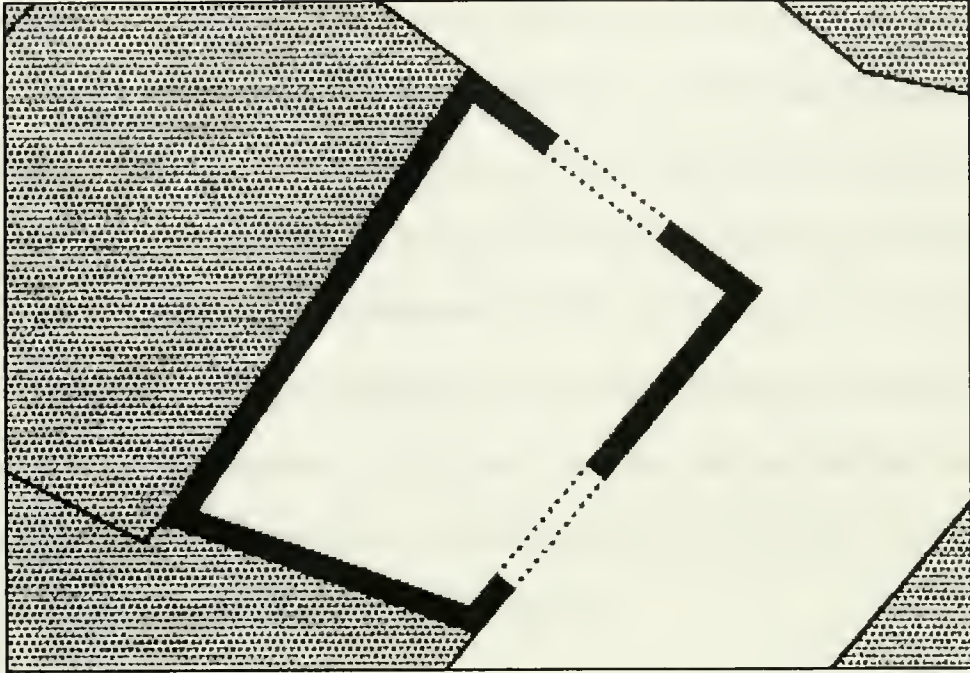






**Figure 22.** Modern Townhouse fronting a side street; illustration provided by AKSCS-E (not shown to scale).





**Figure 24.** Modern Commercial Building fronting a major street and a side street; illustration provided by AKSCS-E (not shown to scale).



## **Chapter 4: Buildings with Courtyards**

Buildings located in the al-Darb al-Ahmar Historic District with courtyards as a primary element in their respective plan were observed during site visits. Those buildings include the Wakala of Sultan Al-Ghuri, the House of Zeinab Khatoun and Maison Harawi. Specific construction periods for Khatoun and Harawi are not known however they are considered to have been constructed between the 16<sup>th</sup> and 17<sup>th</sup> centuries.<sup>1</sup> The Wakala is noted to have been constructed during the 16<sup>th</sup> century.<sup>2</sup> Particular observations were made related to the dimension of courtyards, building heights, building materials, window types and their orientation. Observations were carried out through field measurement, notation and photographic recordation.

### **The Wakāla of Sultan Al-Ghuri**

The Wakāla of Sultan Al-Ghuri was constructed to accommodate city merchants.<sup>3</sup> Above the wakāla a rab' was constructed for the rental of domestic living units. The four-sided configuration of the wakāla and corresponding rab' above provided an enclosed courtyard. The courtyard or ground floor level was used for unloading and temporary storage of merchant goods. A centrally located fountain was a major water feature of the courtyard.

The observed courtyard level plan was comprised of 3 structural bays by 7 ½ structural bays with a consistent singular bay dimension of 350 centimeters from center-line of column to center-line of column. The entire courtyard dimension measures approximately



26 ½ meters by 10 ½ meters.

The rab' floors above the courtyard level are comprised of a series of repetitive units facing the courtyard and street. Their dimension is not known. Floor heights vary from 2½ meters to approximately 3 ½ meters from floor level to floor level. Total height from courtyard level to fourth floor level stair landing is approximately 11 meters.

There were primarily three types of window units facing the courtyard. A traditional mashrabiya, an opening treated with a wooden grille, and an opening treated with a wooden shutter system. Window openings facing the courtyard that were accessible for field measurement were noted as having a consistent opening dimension of 26 by 122 centimeters. These were treated with the grille or shutter system.

Building materials of the Wakāla of Sultan Al-Ghouri include exposed masonry units at the courtyard level, wood structural elements and window treatment, railing, and a finish coat of stucco at the upper level walls (fig. 24-26).

### **The House of Zeinab Khatoun**

The courtyard of the House of Zeinab Khatoun was noted as having the dimension of 940 centimeters by 930 centimeters. The building height was recorded by observing the number of risers contained in the secondary stair located at the northwest corner off the







courtyard. A total of 63 risers with the dimension of 15 centimeter (top of tread to top of tread) from courtyard level to roof level determined an approximate height of 945 centimeters.

The courtyard wall is finished with local limestone with the dimension of 30 by 30 by 50 centimeters. Some variation in dimension occurs but is an exception to the rule. The masonry system was observed beginning from the courtyard level to the first floor level with exception at the west-facing wall where it accommodates the large mashrabiya at the same floor level. Door openings in the courtyard wall measured consistently between 100 centimeters by 200 centimeters and occasionally 100 by 230 centimeters.

A party or secondary wall was observed for its absence of a stucco finish. This provided the ability to take notice of the masonry units. The wall was comprised of an alternating coursework of limestone and brick. Dimensions of the limestone were noted to be 17 by 38 centimeters and 17 by 49 centimeters. Bricks (red) were noted to be 6 by 20 centimeters at the face and approximately 6 centimeters at the end.

The primary façade exposed to the street is comprised of local limestone with a repetitive pattern of smaller masonry units oriented vertically. The entire masonry system rises from street level to the third level. The presumed fourth-level exterior wall surface is finished with smooth, natural color stucco.



There were primarily three types of window units: the traditional mashrabiya, an opening treated with a wooden grille, and an opening treated with a wooden screen. Window openings at courtyard level measured approximately 57 by 92 centimeters. Windows facing the street at the ground level measured 76 by 123 centimeters (fig.27-31).

### **Maison Harawi**

The courtyard of Maison Harawi was noted as having a courtyard dimension of 1140 centimeters by 1195 centimeters. Building height was noted by observation of the number of risers contained in the stair located in the stair hall to the west off the courtyard. One riser was noted as having a dimension of 26 centimeters between the courtyard level and stair hall. There were a total of 41 risers with a dimension of 19 centimeters from top of tread to top of tread totaling 779 centimeters. Combined heights determine an overall building height from courtyard to top of rooftop landing at 820 centimeters.

The courtyard wall is finished with a smooth coat of stucco and is interrupted by a number of window openings. There was primarily one type of window unit interrupting the courtyard wall and only one was accessible for measurement.

The window unit was comprised of 3 openings with vertical orientation. The unit is similar to the traditional mashrabiya however is set flush with the face of the wall as



opposed to projecting into the courtyard, as is the case with the Wakala and Khatoun.

Another feature of the window unit is the incorporation of sliding panels that allow all but the area of the central opening to be closed to the courtyard. Overall dimension of the window unit not including sliding panels was noted at 165 centimeters (vertical dimension) by 450 centimeters (fig. 32-33).

### **Paraphrasing Hassan Fathy**

Egyptian architect Hassan Fathy lived and practiced architecture in Cairo until his death in 1989. <sup>4</sup> He is most recognized for his writings and vision to build appropriate housing for Egypt's poor. In his book *The Arab House in an Urban Setting* Fathy describes the tradition of the courtyard as a primary element in the houses of the Arab city. The role of the courtyard is defined by the necessity for cooling the house in the hot climate associated with Egypt and the relationship of the sky to the daily life of the Arab. Chapters from the book are paraphrased here considered relevant to the development this proposal.

### **The Arab House in the Past**

Considers the response of the desert dweller to the harsh environment a contributing factor of defining culture.

The desert has formed the Arab culture and shaped its house.



The Arab does not consider it an amenity to have his house open onto the street or landscape at ground level.

The sky is considered the only point of relief to the heat of the desert and exposes his house it by use of the *sahn* or courtyard.

The courtyard acts a regulator of the temperature by containing the cool air of the night at ground level and its affects of cooling on all available building surfaces as a result. The courtyard acts as reservoir of coolness until a late hour of the day.

The Arab house is contrasted with those of northern countries and their need for heating versus the need for cooling.

Heating requirements in the Arab house may be met with the use of a brazier for burning solid fuels. 5

### **The Plan**

Expands the context for the use of the courtyard to examples in Fustat in Egypt, Iraq, and Tunis.

Associates this context as having the same environmental conditions as when the Arab lived in a tent.





The house was planned with the sahn or courtyard in the middle and iwans or alcoves leading off of it. Typically there were two iwans, one to the north and the other to the south. Each gives way to a loggia.

The iwans were deeply recessed spaces in plan and provided needed shade from heat of the day and glare of daylight sun. 6

### **The Fountain**

In the middle of the courtyard was a fountain with a basin. The shape of the fountain was influenced through the representation of man's view of the sky from the middle of the house.

The shape of the fountain was not haphazardly conceived it was symbolic, as the Arab understood the house as a microcosm or little world and by using architectural symbols expressed his view of the universe.

The four walls of the courtyard were considered columns carrying the dome of the sky. 7

### **The Malkaf or Wind-Trap**

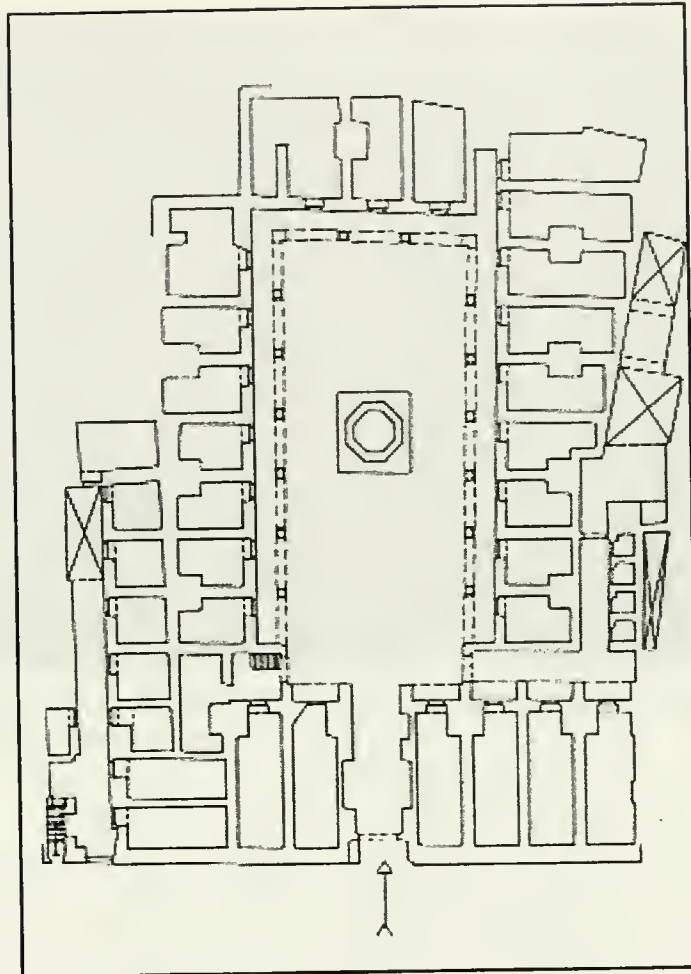
For ventilation the invention of the malkaf or wind-trap was employed at the rooftop oriented to the north to capture the predominant cool breeze from the north and northwest.



The north and west side of the malkaf were left open to catch these predominant breezes.

The malkaf worked in conjunction with a lantern that penetrated the roof at an opposite location of the house to carry a current of air through the house. 8





**Figure 24.** The Wakala of Sultan al-Ghuri ground plan from Behrens-Abouseif (not shown to scale).





**Figure 25.** View of the courtyard of Wakala Sultan al-Ghuri showing structural bays and window units (photo of the author).

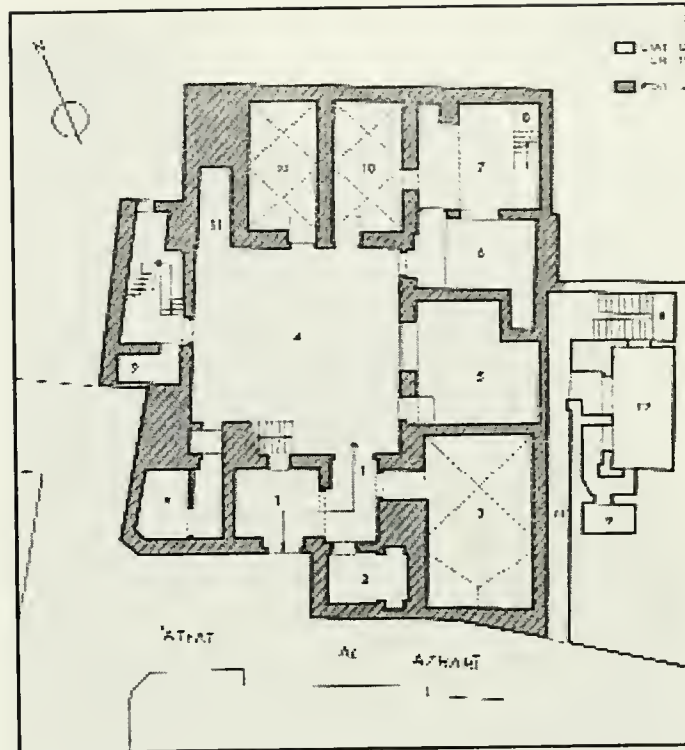






**Figure 26.** View of the Wakala of Sultan al-Ghuri showing the structural bay, window units including the mashrabiya (photo of the author).





**Figure 27.** House of Zeinab Khatoun plan from Revault and Maury (not shown to scale).





**Figure 28.** House of Zeinab Khatoun. View of entry and facade fronting the street (photo of the author).

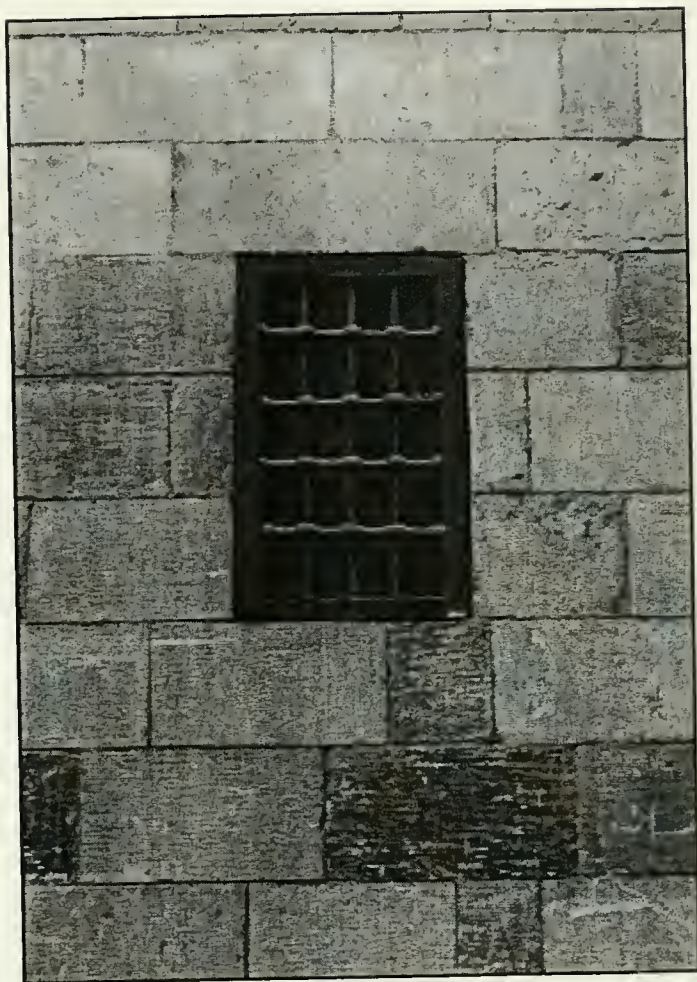




**Figure 29.** View of courtyard and mashrabiya of the House of Zeinab Khatoun (photo of the author)







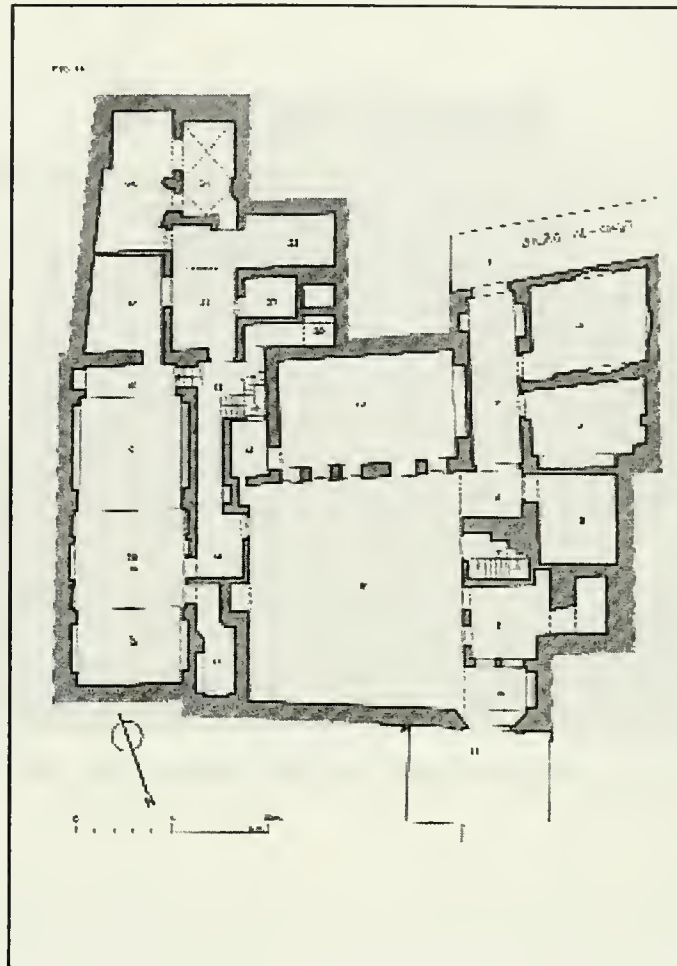
**Figure 30.** Detail of window unit with grille at the House of Zeinab Khatoun (photo of the author).





**Figure 31.** Detail of window unit with screen at the House of Zeinab Khatoun (photo of the author).





**Figure 32.** Maison Harawi plan from Renault and Maury(not shown to scale).





**Figure 33.** View of the mashrabiya at Maison Harawi (photo of the auhtor).





## **Chapter 5: The Building Fabric**

The building fabric or the general character of buildings in the area is presented here according to time period and composition of building materials. The time period has been summarized into fifty and ten year time frames.<sup>1</sup> The material composition is based on documentation of a load bearing wall condition from a building in the area with a construction date of 1910.<sup>2</sup>

### **Building Periods**

Review of the fifty-year period indicates that a majority of the buildings were constructed between 1900 and 1950. The second highest numbers indicate that the majority of buildings were constructed between 1950 and 2000. The lowest numbers of buildings were constructed between 1850 and 1900 (table 1).

Review of the ten-year period indicates that a majority of buildings were constructed between 1900 and 1910. The next highest concentration occurs between 1910 and 1920 with an equivalent number of buildings constructed between 1970 and 1980. These figures indicate that the period around 1900 and 1910 may be considered to be the closest characterization of the general building fabric (table 2).

### **Building Material and Structural System**

The load bearing wall construction of Building 469 is considered to be characteristic of the area in general.<sup>3</sup> The construction of the wall has an overall thickness of 60



centimeters. Beginning with the exterior plaster finish there is a 20 by 20 by 60 centimeter limestone block, a 20 centimeter rubble core of limestone and grout, and another limestone block finished at the interior with a layer of plaster.

There are two types of floor construction that span the load bearing walls. One includes the use of wood joists, the other iron I-beams. The floor system that uses the wood joists as the primary structural member includes a 20 by 20 by 2 centimeter floor tile, 7 centimeters of limestone and grout rubble core, a fabric mesh acting as a water barrier that rests on a hardwood substrate, that in turn rests on 10 by 10 centimeter wood joists, a wood lath finished with a layer of plaster (fig. 34).

The floor system that uses the iron I-beam includes a 20 by 20 by 2-centimeter floor tile, a layer of sand, mortar and crushed stone to accommodate the depth of the 15 by 8 centimeter I-beam and a brick vaulting.

The use of one floor system over another is determined by the length of the span from load bearing wall to load bearing wall. The greater the span the more likely the use of the I-beam floor system. Further support of this is that the building type does not present a density of high live loads for any particular area in the building plan.

The square area and height of Building 469 is noted as having one of the largest traditional residential buildings in the area. This results in having individual room area



also greater than most buildings. The overall wall thickness of other buildings may have a lesser dimension however the material and method of construction may be considered to be considered the common load bearing condition.



<b>Table 1</b>							
1600-1650	1650-1700	1700-1750	1750-1800	1800-1850	1850-1900	1900-1950	1950-2000
289				213	212	216	215
					283	218	217
					291	285	292
					298	286	293
					300	287	294
					301	296	295
					408	299	297
					416	302	303
					419	423	409
					421	426	412
					424	429	413
					425	430	414
					428	431	415
					436	432	417
					441	433	418
						434	427
						435	437
						440	438
						444	439
						445	448
						446	
						447	

Heading numbers represent 50-year time periods. Numbers under heading represent building identification according to AKSC-E fact sheets provided to the author prior to their final publication.





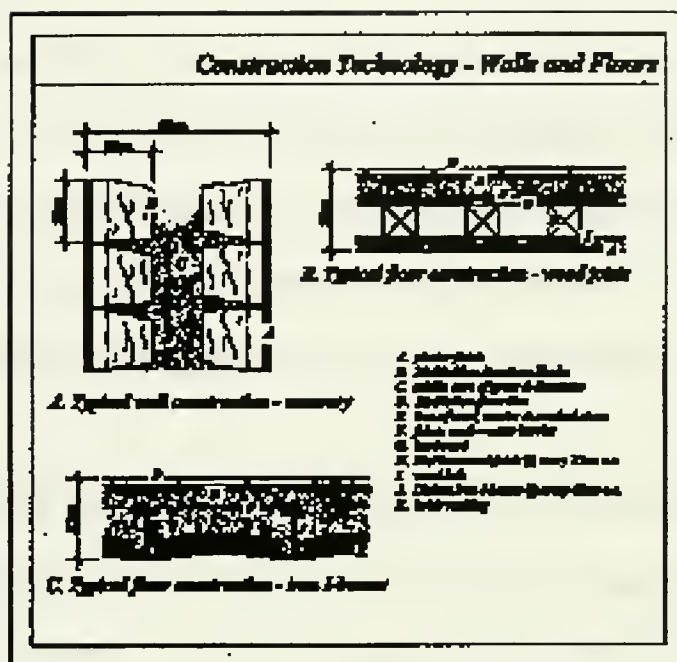
Table 2											
1600-1700	1700-1900	1900-1910	1910-1920	1920-1930	1930-1940	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000
289	213	212	216	286	435	426	427	215	294	297	438
290		218	296	287	293			217	295	412	439
		283	429	299				216	303	414	
		285	430	431				292	409	415	
		291	433	302					417	437	
		298	435						418		
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		408									
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		432									
		424									
		440									
		441									
		469									

Heading numbers represent 10-year periods. Numbers under heading represent building identification according to AKCS-E fact sheets provided to the author prior to their final publication.



- A. plaster/putch
- B. Mortarless Concrete Block
- C. masonry of concrete block

- A. Solid concrete floor
- B. Reinforced concrete floor
- C. Reinforced concrete floor
- D. Reinforced concrete floor
- E. Reinforced concrete floor
- F. Reinforced concrete floor
- G. Reinforced concrete floor
- H. Reinforced concrete floor
- I. Reinforced concrete floor
- J. Reinforced concrete floor
- K. Reinforced concrete floor



**Figure 34:** Construction diagram of Building 469 showing floor and wall construction; provided by AKCS-E (not shown to scale).



## Chapter 6: The Family Unit

The nuclear family type consisting of the head of the family, his wife and children account for approximately 75% of the number of families in the greater neighborhood. The remaining 25% involve the extended family type, which consists of the head of the family, his wife and children, as well as his parents and grandchildren. The average household size in the neighborhood was found to be 5.1 persons per household.

Daily life of the household may best be described through occupations in the neighborhood. 41% of the population are craftsmen while 22% are government workers. 39 % work outside the area compared to 30% who work in the area. 55% walk to work compared with the next largest percentage of 35% who ride the bus. 1

These percentages indicate that the head of the household will most likely be a craftsman and will spend his day working either in the neighborhood or at a nearby location in the area that require he walk or ride the bus. Average monthly earnings are 200 to 400 L.E. (Egyptian Pounds) which is roughly equivalent to \$57.00 to \$114.00 U.S. dollars. 2



## **Chapter 7: Summary and Recommendations**

### **Building Typology**

Residential typology is understood to have a clear pattern of footprint, room organization and orientation to the street. The floor plan and room organization however is also understood to be very limited in consideration of cross ventilation and natural light. Some rooms of buildings in the area do not provide either. Recommendations are made for alternate typology and or building plan configuration that accommodate adequate cross ventilation such as a courtyard or similar opening in the floor plan.

### **Building Fabric**

The predominant load bearing wall condition of the buildings in the area severely limit growth or addition to existing buildings. Alterations to load bearing wall conditions require careful intervention on the part of a builder or building contractor not yet identified in the area.

An alternate structural system similar to contemporary vernacular practice in the area is recommended. Typically this includes a cast in place concrete frame structure and a brick or masonry unit in-fill of the wall area. Appropriate structural detailing to withstand building and seismic loads will be required. Additionally, most of these contemporary structures lack a protective finish such as plaster or stucco. The use of stucco is therefore recommended as an exterior finish for new construction.





## **Family Unit**

Percentages of members in each household indicate the average household is just over five. 1 Recommendations are made for the proposed building to be located at Lot 488 to accommodate family units consisting of two, five, and six to eight persons. This includes the traditional nuclear and extended family units. 2

## **Density**

Averages indicate a total of 1.9 persons per room in the neighborhood. Recommendations are made based on an average occupancy of 2 persons per room. 3

## **Room Use**

Recommendations related to room use are based on current use patterns of the typical household in the neighborhood. These patterns include sleeping, cooking and dishwashing, the bathroom, and working at home. 4 The living unit should provide area for each use pattern. In the case of working at home ground level units may include an area for this use pattern. A separate area for this type of activity is also recommended.

## **Kitchens**

The devotion of one room for the use as a kitchen is not typical due to space shortage. Cooking activity occurs in stair halls, stair landings, and open courtyards. Kitchenettes are available to those that can afford them and are generally situated next to a water



source that is typically adjacent to a bathroom. 5

Recommendations are made for each living unit to include a kitchen or kitchenette. Both should be separate from the bathroom and include area for a compact refrigerator, counter top-stove, sink, and storage cabinets.

### **Bathrooms**

Bathrooms should include a toilet, sink, and two water outlets for bathing. This includes one overhead outlet for a shower hook-up and one outlet for bathing and washing in general.

### **Clothes Washing**

An entire room is not devoted to clothes washing. This activity takes place near water sources and often lacks privacy. Clothes drying occurs on rooftops or from lines hung in windows or in courtyards. 6 It is recommended that kitchens provide area for compact washing machines and that the rooftop be made accessible for drying of clothes.



## **Notes**

### **Chapter 1: Lot 488 Darb Shouglan**

1. The lot number identification was provided by the Aga Khan Cultural Services-Egypt (AKCS-E) office prior to publication of the file referred to as Building Fact Sheets. Lot boundary follows the illustration from the Aga Khan Trust for Culture (AKTC) Technical Brief No. 2, pg. 98.
2. Physical conditions were provided by AKCS-E offices prior to publication from the file referred to as Building Fact Sheets.

### **Chapter 2: The Context**

1. Building identification numbers were provided by the AKCS-E team prior to final publication of the file referred to as Fact Sheets.

### **Chapter 3: Identified Building Typology**

1. Building typology has been identified by the AKSC-E team and follows the content of the Technical Brief No. 2: Summary of Physical Survey, pg. 26.
2. AKTC Technical Brief No. 2, pg. 27.
3. AKTC Technical Brief No. 2, pg. 31
4. AKTC Technical Brief No.2, pg. 32
5. AKTC Technical Brief No. 2, pg. 34
6. AKTC Technical Brief No. 2, pg. 34

### **Chapter 4: Buildings with Courtyards**

1. Revault and Maury, pg. 5
2. Behrens-Abouseif, pg. 39-40
3. Behrens-Abouseif, pg. 39-40
4. Sachs, pg. E1
5. Fathy, pg. 1



6. Fathy, pg.2
7. Fathy, pg. 2-3
8. Fathy, pg. 5

#### **Chapter 5: The Building Fabric**

1. This summary follows tables by the author and may be referred to in the appendices
2. Construction documentation was provided by AKSC-E team prior to publication from a file referred to as Darb Shouglan School.
3. Reference is made to the construction documentation diagram provided by the AKSC-E team.

#### **Chapter 6: The Family Unit**

1. AKTC Technical Brief No. 2, pg. 70
2. AKTC Technical Brief No. 2, pg. 72

#### **Chapter 7: Summary and Recommendations**

1. AKTC Technical Brief No. 2, pg. 70
2. AKTC Technical Brief No. 2, pg. 78
3. AKTC Technical Brief No. 2, pg. 78
4. AKTC Technical Brief No. 2, pg. 78
5. AKTC Technical Brief No. 2, pg. 79





## Bibliography

Aga Khan Trust for Culture. *Technical Brief No. 2, Conservation Planning in the Aslam Mosque Neighborhood*. Geneva: The Aga Khan Trust for Culture, 1999.

Behrens-Abouseif, Doris. *Islamic architecture in Cairo, An Introduction*. Cairo: The American University in Cairo Press, 1989.

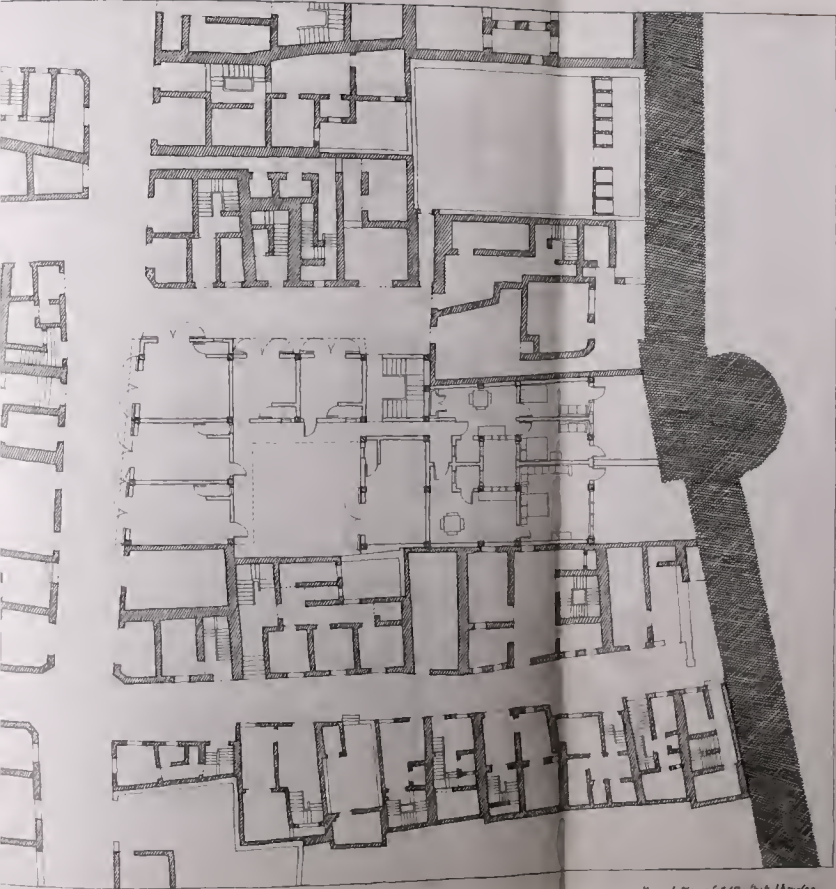
Fathy, Hassan. *The Arab House in the Urban Setting*. London: Longman for the University of Essex, 1970.

Maury, Bernard. *Palais Et Maisons Du Caire, Du XIV Au XVIII Siecle, IV*. Paris: Institut Francais D'Archaeologie Orientale, 1983.

Revault and Maury. *Palais Et Maisons Du Caire, Du XIV Au XVIII Siecle, III*. Paris: Institut Francais D'Archaeologie Orientale, 1979.

Sachs, Susan. *The Arts, Honoring a Visionary if Not His Vision*. New York City: The New York Times, 2000.



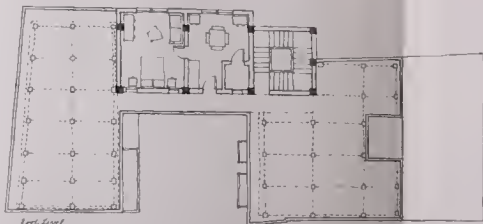


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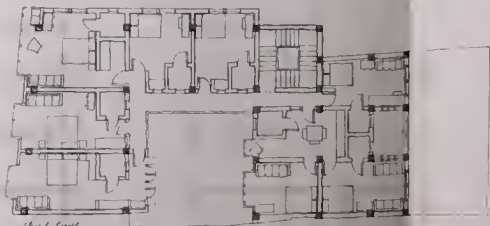
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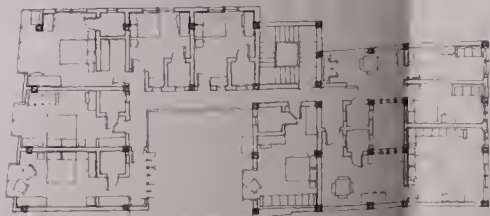
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1st floor

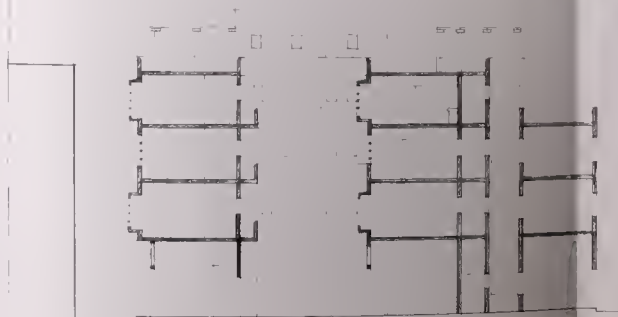


2nd floor



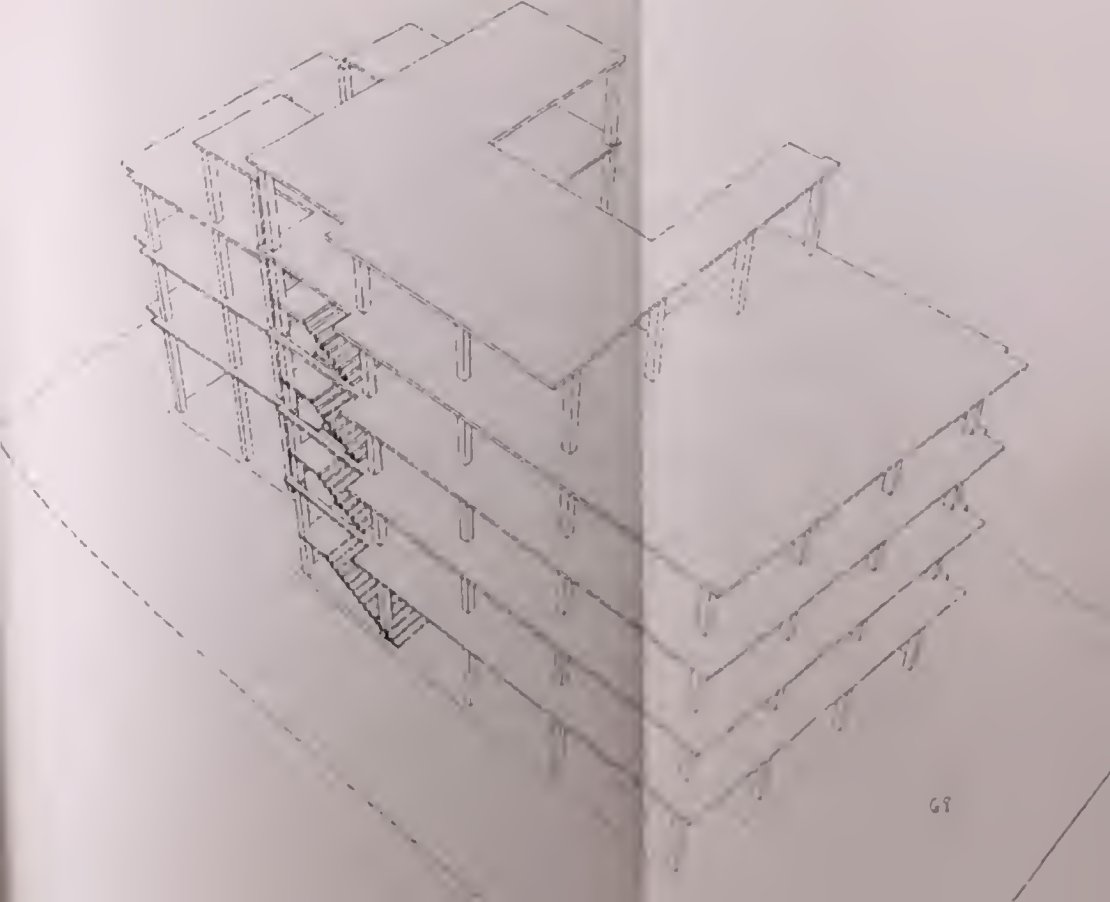
3rd floor



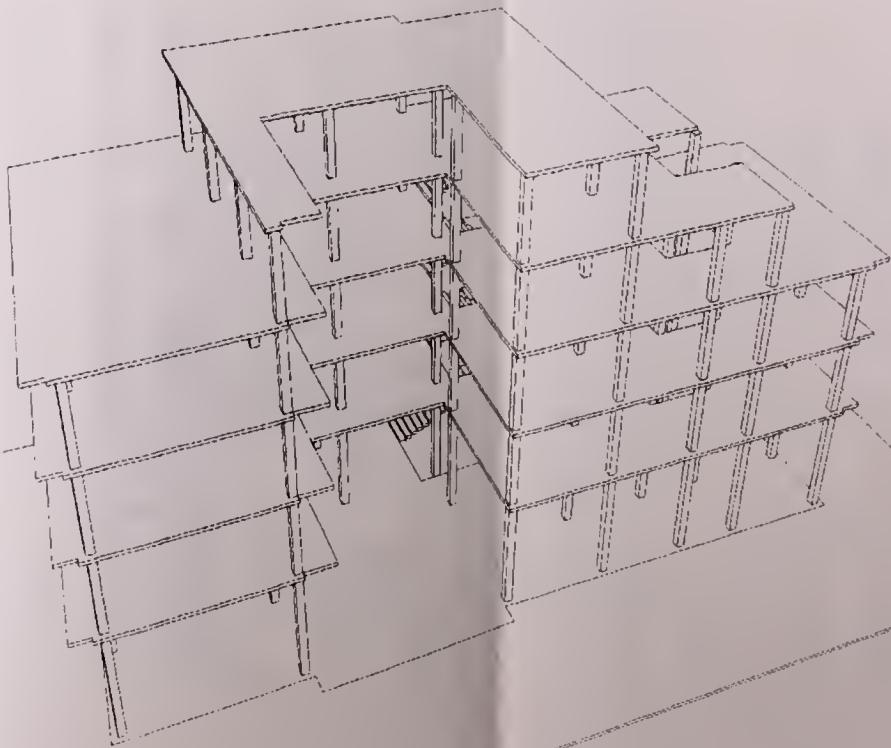




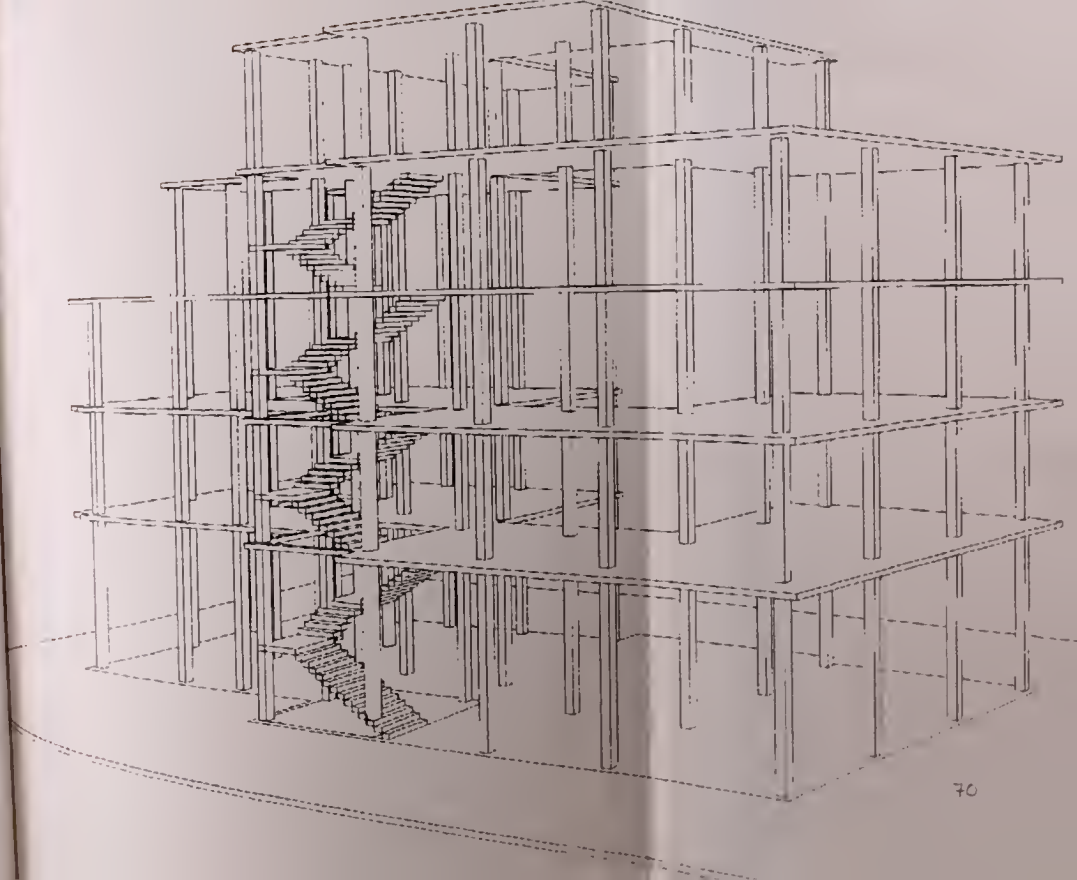






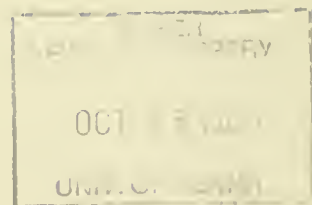














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